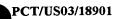


REC'd PCT/PTO 10 DEC 2004

SEQUENCE LISTING

:110>	Oregon Health & Science University Michael, Heinrich Charles Corless, Christopher Lee Fletcher, Jonathan Alfred Demetri, George D.	
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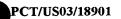
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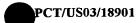


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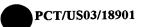
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- Val Thr Ile Ser Val His Glu Lys Gly Phe Ile Glu Ile Lys Pro Thr 305 310 315 320
- Phe Ser Gln Leu Glu Ala Val Asn Leu His Glu Val Lys His Phe Val 325 330 335
- Val Glu Val Arg Ala Tyr Pro Pro Pro Arg Ile Ser Trp Leu Lys Asn 340 345 350
- Asn Leu Thr Leu Ile Glu Asn Leu Thr Glu Ile Thr Thr Asp Val Glu , 355
- Lys Ile Gln Glu Ile Arg Tyr Arg Ser Lys Leu Lys Leu Ile Arg Ala 370 375 380
- Lys Glu Glu Asp Ser Gly His Tyr Thr Ile Val Ala Gln Asn Glu Asp 385 390 395 400
- Ala Val Lys Ser Tyr Thr Phe Glu Leu Leu Thr Gln Val Pro Ser Ser 415
- Ile Leu Asp Leu Val Asp Asp His His Gly Ser Thr Gly Gly Gln Thr
 420 425 430
- Val Arg Cys Thr Ala Glu Gly Thr Pro Leu Pro Asp Ile Glu Trp Met 435 440 445
- Ile Cys Lys Asp Ile Lys Lys Cys Asn Asn Glu Thr Ser Trp Thr Ile 450 455 460
- Leu Ala Asn Asn Val Ser Asn Ile Ile Thr Glu Ile His Ser Arg Asp 465 470 475 480





- Arg Ser Thr Val Glu Gly Arg Val Thr Phe Ala Lys Val Glu Glu Thr 485 490 495
- Ile Ala Val Arg Cys Leu Ala Lys Asn Leu Leu Gly Ala Glu Asn Arg 500 505 510
- Glu Leu Lys Leu Val Ala Pro Thr Leu Arg Ser Glu Leu Thr Val Ala 515 520 525
- Ala Ala Val Leu Val Leu Val Ile Val Ile Ile Ser Leu Ile Val 530 535 540
- Leu Val Val Ile Trp Lys Gln Lys Pro Arg Tyr Glu Ile Arg Trp Arg 545 550 555 560
- Val Ile Glu Ser Ile Ser Pro Asp Gly His Glu Tyr Ile Tyr Val Asp 565 570 575
- Pro Met Gln Leu Pro Tyr Asp Ser Arg Trp Glu Phe Pro Arg Asp Gly 580 585 590
- Leu Val Leu Gly Arg Val Leu Gly Ser Gly Ala Phe Gly Lys Val Val 595 600 605
- Glu Gly Thr Ala Tyr Gly Leu Ser Arg Ser Gln Pro Val Met Lys Val 610 615 620
- Ala Val Lys Met Leu Lys Pro Thr Ala Arg Ser Ser Glu Lys Gln Ala 625 630 635 640
- Leu Met Ser Glu Leu Lys Ile Met Thr His Leu Gly Pro His Leu Asn 645 650 655
- Ile Val Asn Leu Leu Gly Ala Cys Thr Lys Ser Gly Pro Ile Tyr Ile 660 665 670
- Ile Thr Glu Tyr Cys Phe Tyr Gly Asp Leu Val Asn Tyr Leu His Lys 675 680 685
- Asn Arg Asp Ser Phe Leu Ser His His Pro Glu Lys Pro Lys Lys Glu 690 695 700
- Leu Asp Ile Phe Gly Leu Asn Pro Ala Asp Glu Ser Thr Arg Ser Tyr 705 710 715 720





- Val Ile Leu Ser Phe Glu Asn Asn Gly Asp Tyr Met Asp Met Lys Gln 725 730 735
- Ala Asp Thr Thr Gln Tyr Val Pro Met Leu Glu Arg Lys Glu Val Ser 740 745 750
- Lys Tyr Ser Asp Ile Gln Arg Ser Leu Tyr Asp Arg Pro Ala Ser Tyr 755 760 765
- Lys Lys Lys Ser Met Leu Asp Ser Glu Val Lys Asn Leu Leu Ser Asp 770 775 780
- Asp Asn Ser Glu Gly Leu Thr Leu Leu Asp Leu Leu Ser Phe Thr Tyr 785 790 795 800
- Gln Val Ala Arg Gly Met Glu Phe Leu Ala Ser Lys Asn Cys Val His 805 810 815
- Arg Asp Leu Ala Ala Arg Asn Val Leu Leu Ala Gln Gly Lys Ile Val 820 825 830
- Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp Ile Met His Asp Ser Asn 835 840 845
- Tyr Val Ser Lys Gly Ser Thr Phe Leu Pro Val Lys Trp Met Ala Pro 850 855
- Glu Ser Ile Phe Asp Asn Leu Tyr Thr Thr Leu Ser Asp Val Trp Ser 865 870 875 880
- Tyr Gly Ile Leu Leu Trp Glu Ile Phe Ser Leu Gly Gly Thr Pro Tyr 885 890 895
- Pro Gly Met Met Val Asp Ser Thr Phe Tyr Asn Lys Ile Lys Ser Gly 900 905 910
- Tyr Arg Met Ala Lys Pro Asp His Ala Thr Ser Glu Val Tyr Glu Ile 915 920 925
- Met Val Lys Cys Trp Asn Ser Glu Pro Glu Lys Arg Pro Ser Phe Tyr 930 935 940
- His Leu Ser Glu Ile Val Glu Asn Leu Leu Pro Gly Gln Tyr Lys Lys 945 950 955 960
- Ser Tyr Glu Lys Ile His Leu Asp Phe Leu Lys Ser Asp His Pro Ala

965

970

PCT/US03/18901

975

Val Ala Arg Met Arg Val Asp Ser Asp Asn Ala Tyr Ile Gly Val Thr 990 985 980

Tyr Lys Asn Glu Glu Asp Lys Leu Lys Asp Trp Glu Gly Gly Leu Asp 1000 995

Glu Gln Arg Leu Ser Ala Asp Ser Gly Tyr Ile Ile Pro Leu Pro 1020 1015 1010

Asp Ile Asp Pro Val Pro Glu Glu Glu Asp Leu Gly Lys Arg Asn 1035 1030 1025

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Ser Ser Thr Phe Ile Lys Arg Glu Asp Glu Thr Ile Glu Ser Ser 1065 1060 1055

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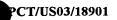




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Gln :	ctt Leu 25	tca Ser	tta Leu	ccc Pro	tct Ser	atc Ile 30	ctt Leu	cca Pro	aat Asn	gaa Glu	aat Asn 35	gaa Glu	aag Lys	gtt Val	gtg Val	511
cag Gln 40	ctg Leu	aat Asn	tca Ser	tcc Ser	ttt Phe 45	tct Ser	ctg Leu	aga Arg	tgc Cys	ttt Phe 50	gly aaa	gag Glu	agt Ser	gaa Glu	gtg Val 55	559
agc Ser	tgg Trp	cag Gln	tac Tyr	ccc Pro 60	atg Met	tct Ser	gaa Glu	gaa Glu	gag Glu 65	agc Ser	tcc Ser	gat Asp	gtg Val	gaa Glu 70	atc Ile	607
aga Arg	aat Asn	gaa Glu	gaa Glu 75	aac Asn	aac Asn	agc Ser	ggc Gly	ctt Leu 80	ttt Phe	gtg Val	acg Thr	gtc Val	ttg Leu 85	gaa Glu	gtg Val	655
agc Ser	agt Ser	gcc Ala 90	tcg Ser	gcg Ala	gcc Ala	cac His	aca Thr 95	gjà aaa	ttg Leu	tac Tyr	act Thr	tgc Cys 100	tat Tyr	tac Tyr	aac Asn	703
cac His	act Thr 105	cag Gln	aca Thr	gaa Glu	gag Glu	aat Asn 110	GIU	ctt Leu	gaa Glu	ggc Gly	agg Arg	g cac g His	att Ile	tac Tyr	atc Ile	751
tat Tyr 120	Val	cca Pro	gac Asp	cca Pro	gat Asp 125	Val	gcc Ala	ttt Phe	gta Val	cct Pro 130	, пе	a gga ı Gly	atg Met	acg Thr	gat Asp 135	799
tat Tyr	tta Leu	gto Val	ato L Ile	gtg Val	. GIV	gat Asp	gat As <u>r</u>	gat Asp	tct Ser 145	. Alc	ati	t ata e Ile	cct Pro	tgt Cys 150	cgc Arg	847
aca Thr	act Thr	gat Asp	2 CCC 5 Pro 159	o Gli	g act ı Thr	cct Pro	gta Va:	a acc L Thi 160	с тег	a cad 1 His	aa s As	c agt n Sei	gag Glu 169		g gtg y Val	895
Val	. Pro	17	a Sei O	г Ту	c Asp	Sei	17	5 G G T 1	n Giy	A BII	e As	18	0	L 111	e act e Thr	943
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acc Thi 200	r Ile	c cc e Pr	a tt o Ph	t aa e As	t gt n Va 20	l Ty	t gc r Al	t tt a Le	a aa u Ly	a gc s Al 21	a II	a tc ir Se	a ga r Gl	g ct u Le	g gat u Asp 215	
Lei	u Gl	u Me	t Gl	u Al 22	а Le 0	u Ly	s Th	r Va	1 Ty 22	т ьу	B 56	er Gi	y Gi	23		•
gt: Va	g gt 1 Va	c ac l Th	c tg ir Cy 23	rs Al	t gt a Va	t tt 1 Ph	t aa e As	ic aa in As 24	n G1	g gt u Va	g gt	tt ga al As	с сt р Le 24	u Ga	a tgg n Trp	1135



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atc Ile	aaa Lys 265	gtc Val	cca Pro	tcc Ser	atc Ile	aaa Lys 270	ttg Leu	gtg Val	tac Tyr	act Thr	ttg Leu 275	acg Thr	gtc Val	ccc Pro	gag Glu		1231
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aac Asn	ctg Leu	cat His	Glu	gtc Val	aaa Lys	cat His	ttt Phe 335	vaı	gta Val	gag Glu	gtg Val	g cgg Arg 340	ALW	tac Tyr	cca Pro	a o	1423
cct Pro	ccc Pro 345	Arg	g ata g Ile	tcc Ser	tgg Trp	ctg Leu 350	. гуз	aac Asr	aat n Asr	cto Lev	g act i Thi 355	ctg Leu	att Ile	gaa Glu	aat Asi	t n	1471
cto Lei 360	ı Thi	gag Glu	g ato 1 Ile	c acc	act Thr	Asp	gtg Val	gaa Glu	a aag ı Ly:	g att 370	: GT	g gaa n Glu	ata Ile	agg Arg	ta Ty 37		1519
cga Arg	a ago g Sei	c aaa c Ly:	a tta s Le	a aag u Lys 380	s Lev	g ato 1 Ile	cgt Arg	g Ala	t aag a Ly 38	s Gr	a ga u Gl	a gad u Asp	agt Ser	390 : Gl ₂		t s	1567
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ac Th 44	ır Pr	g ct o Le	t co au Pi	et ga co As	t at p Il 44	e G1	g tg u Tr	g at p Me	g at et Il	a to le Cy 45	נת פי	aa ga ys As	t at p Il	t aa e Ly		aa ys 55	1759
t <u>s</u> C	gt aa /s As	at aa an Aa	at ga sn G	aa ac lu Th 46	ır Se	c to r Tr	g ac p Th	t at ir I:	те п	eu Ai	cc aa la A	ac aa sn As	it gt sn Va	c to 1 Se 47		ac sn	1807
at I:	tc at le I	cc ac le Tl	nr G	ag at lu II 75	cc ca le Hi	ac to is Se	ec co	rg A	ac a sp A 80	gg ag rg S	gt a er T	cc gt hr Vá	g ga al Gl 48		gc c	gt rg	1855
gʻ	tg a	ct t	tc g	cc a	aa gt	g g	ag ga	ag a	cc a	tc g	cc g	tg c	ga to	gc ct	tg g	ıct ,	1903



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aag aat Lys Asn 505		t gga eu Gly	Ala	gag aa Blu As 510	c cga n Arg	gag c Glu I	tg aag eu Lys 515		gtg go /al Al	et co la Pr	ec co	1951
acc ctg Thr Leu 520	cgt to Arg Se	ct gaa er Glu	ctc a Leu 5	acg gt Thr Va	g gct al Ala	HIG F	gca gto Ala Val 530	ctg (Leu '	gtg ct Val Le		eu 35	1999
gtg att Val Ile	gtg a	tc atc le Ile 540	ser	ctt at Leu I	t gto le Val	ctg 9 Leu 1 545	gtt gto Val Val	att Ile	<u>-</u> -	aa ca ys Gi 50	ag ln	2047
aaa ccg Lys Pro	Arg T	at gaa yr Glu 55	att i Ile	cgc to Arg T	gg agg rp Arg 560	, var	att gaa Ile Gli	a tca u Ser	atc a Ile S 565	gc c er P	cg ro	2095
gat gga Asp Gly	cat g His G 570	aa ta lu Ty	t att	Tyr v	tg gad al Ası 75	c ccg Pro	atg ca Met Gl	g ctg n Leu 580	cct t Pro T	at g yr A	rac rab	2143
tca aga Ser Arg 585	Trp G	gag tt Slu Ph	t cca e Pro	aga g Arg A 590	at gga sp Gl	a cta y Leu	gtg ct Val Le 59	u 0-1	cgg S	gtc t /al I	tg Leu	2191
ggg tct Gly Ser 600	gga g Gly A	gcg tt Ala Ph	t ggg e Gly 605	aag g Lys V	gtg gt Val Va	t gaa l Glu	gga ac Gly Th 610	a gcc ir Ala	tat q Tyr (ta Leu 615	2239
agc cgg Ser Arg	tcc (caa co Gln Pr 62	o Val	atg a Met]	aaa gt Lys Va	t gca 1 Ala 625	gtg aa Val Ly	ng atg ys Met		aaa (Lys : 630	ccc Pro	2287
acg gcc Thr Ala	ı Arg	tcc ag Ser Se 635	gt gaa er Glu	aaa Lys	caa go Gln Al 64	аьец	atg to Met So	et gaa er Glu	ctg Leu 645	aag Lys	ata Ile	2335
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tgc acc Cys Th: 66	r Lys	tca g Ser G	ge eec ly Pro	att Ile 670	tac at Tyr I:	cc atc le Ile	TILL G	ag tat lu Tyi 75	tgc Cys	ttc Phe	tat Tyr	2431
gga ga Gly As 680	t ttg p Leu	gtc a Val A	ac tat sn Ty: 685	c Leu	cat a His L	ag aat ys Asr	agg g Arg A 690	at ago sp Se:	c ttc r Phe	ctg Leu	agc Ser 695	2479
cac ca His Hi	c cca s Pro	Glu I	ag cca ys Pro	a aag o Lys	aaa g Lys G	ag ctg lu Lei 70!	r wab 1	itc tt le Ph	t gga e Gly	ttg Leu 710	aac Asn	2527
cct gc Pro Al	t gat a Asp	gaa a Glu s 715	gc ac	a cgg r Arg	ser r	at gti yr Vai	t att t l Ile I	ta tc Leu Se	t ttt r Phe 725		aac Asn	2575
aat gg Asn Gl	ıt gac .y Asp	tac a	itg ga Met As	c atg p Met	aag c	ag gc	t gat a a Asp '	act ac Thr Th	a cag r Gln	tat Tyr	gtc Val	2623



730 735 . 740

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tca Ser 760	ctc Leu	tat Tyr	gat Asp	cgt Arg	cca Pro 765	gcc Ala	tca Ser	tat Tyr	aag Lys	aag Lys 770	aaa Lys	tct Ser	atg Met	tta Leu	gac Asp 775	2719
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tac Tyr	aco Thi	aca Thi	a cto Leu 875	ı Ser	gat Asp	gtc Val	tgg Trp	tct Ser 880	Тут	ggc Gly	ati	t cto	g cto 1 Let 88!		g gag p Glu	3055
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act Thi	t tto Pho	е Ту	c aat	t aag n Lys	g ato	e aag E Lys 910	s Sei	c Gly	g tac y Ty:	c cgg	g at g Me 91	CAL	c aa a Ly	g cc s Pr	t gac o Asp	3151
cac Hi 92	s Al	t ac a Th	c ag r Se	t gaa	a gte u Vai 92	l Ty	c gaq r Gl	g ato u Ile	e Me	g gt t Va 93	т гъ	a tg s Cy	c tg s Tr	g aa p As	c agt n Ser 935	
ga Gl	g cc u Pr	g ga o Gl	g aa u Ly	g ag s Ar 94	g Pr	c tc o Se:	c tt r Ph	t tad	c ca r Hi 94	ѕ ье	g ag u Se	ıt ga er Gl	g at u Il	t gt e Va 95	g gag il Glu 50	3247
aa As	t ct n Le	g ct u Le	g cc u Pr 95	o Gl	a ca y Gl	a ta n Ty	t aa r Ly	a aag s Ly 96	s Se	t ta r Ty	t ga r Gl	ia aa lu Ly	a at s Il 96	.е п.	ic ctg is Lev	3295 I
ga As	c tt p Ph	c ct e Le 97	u Ly	g ag 's Se	t ga r As	c ca p Hi	t cc s Pr 97	o Al	t gt a Va	g go l Al	a co .a Ar	gc at cg Me 98	:L AI	gt gt g Va	g gad al Asp	3343





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Cys Phe Gly Glu Ser Glu Val Ser Trp Gln Tyr Pro Met Ser Glu Glu 50 55

Glu Ser Ser Asp Val Glu Ile Arg Asn Glu Glu Asn Asn Ser Gly Leu
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Phe Val Thr Val Leu Glu Val Ser Ser Ala Ser Ala Ala His Thr Gly 85 90 95

Leu Tyr Thr Cys Tyr Tyr Asn His Thr Gln Thr Glu Glu Asn Glu Leu 100 105 110

Glu Gly Arg His Ile Tyr Ile Tyr Val Pro Asp Pro Asp Val Ala Phe 115 120 125

Val Pro Leu Gly Met Thr Asp Tyr Leu Val Ile Val Glu Asp Asp Asp 130 135

Ser Ala Ile Ile Pro Cys Arg Thr Thr Asp Pro Glu Thr Pro Val Thr 145 150 155 160

Leu His Asn Ser Glu Gly Val Val Pro Ala Ser Tyr Asp Ser Arg Gln 165 170 175

Gly Phe Asn Gly Thr Phe Thr Val Gly Pro Tyr Ile Cys Glu Ala Thr



Val Lys Gly Lys Lys Phe Gln Thr Ile Pro Phe Asn Val Tyr Ala Leu 195 200 205

Lys Ala Thr Ser Glu Leu Asp Leu Glu Met Glu Ala Leu Lys Thr Val 210 215 220

Tyr Lys Ser Gly Glu Thr Ile Val Val Thr Cys Ala Val Phe Asn Asn 225 230 235 240

Glu Val Val Asp Leu Gln Trp Thr Tyr Pro Gly Glu Val Lys Gly Lys 245 250 255

Gly Ile Thr Met Leu Glu Glu Ile Lys Val Pro Ser Ile Lys Leu Val 260 265 270

Tyr Thr Leu Thr Val Pro Glu Ala Thr Val Lys Asp Ser Gly Asp Tyr 275 280 285

Glu Cys Ala Ala Arg Gln Ala Thr Arg Glu Val Lys Glu Met Lys Lys 290 295 300

Val Thr Ile Ser Val His Glu Lys Gly Phe Ile Glu Ile Lys Pro Thr 305 310 315 320

Phe Ser Gln Leu Glu Ala Val Asn Leu His Glu Val Lys His Phe Val 325 330 335

Val Glu Val Arg Ala Tyr Pro Pro Pro Arg Ile Ser Trp Leu Lys Asn 340 345 350

Asn Leu Thr Leu Ile Glu Asn Leu Thr Glu Ile Thr Thr Asp Val Glu 355 360 365

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Ala Val Lys Ser Tyr Thr Phe Glu Leu Leu Thr Gln Val Pro Ser Ser 405 410 415

Ile Leu Asp Leu Val Asp Asp His His Gly Ser Thr Gly Gly Gln Thr 420 425 430



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- Asn Arg Asp Ser Phe Leu Ser His His Pro Glu Lys Pro Lys Lys Glu 690 695 700
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- Val Ile Leu Ser Phe Glu Asn Asn Gly Asp Tyr Met Asp Met Lys Gln 725 730 735
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- Lys Tyr Ser Asp Ile Gln Arg Ser Leu Tyr Asp Arg Pro Ala Ser Tyr 755 760 765
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- Asp Asn Ser Glu Gly Leu Thr Leu Leu Asp Leu Leu Ser Phe Thr Tyr 785 790 795 800
- Gln Val Ala Arg Gly Met Glu Phe Leu Ala Ser Lys Asn Cys Val His 805 810 . 815
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- Tyr Gly Ile Leu Leu Trp Glu Ile Phe Ser Leu Gly Gly Thr Pro Tyr 885 890 895
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925

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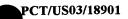
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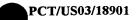
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act Thr	tac Tyr	cct Pro 250	gga Gly	gaa Glu	gtg Val	aaa Lys	ggc Gly 255	aaa Lys	ggc	atc Ile	aca Thr	atg Met 260	ctg Leu	gaa Glų	gaa Glu	1183
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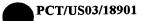
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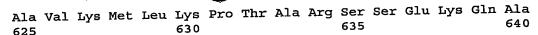
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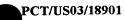
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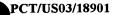
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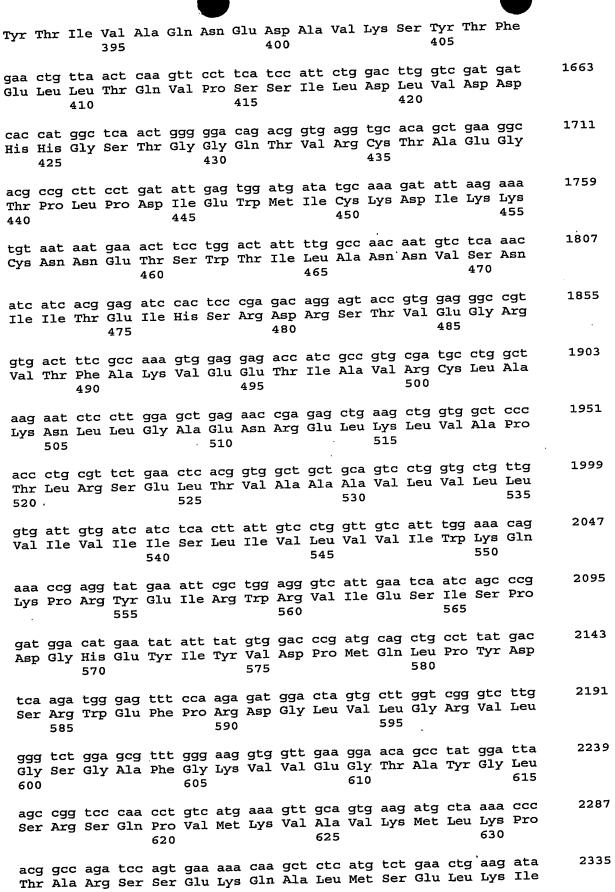


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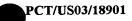
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Gly Phe Asn Gly Thr Phe Thr Val Gly Pro Tyr Ile Cys Glu Ala Thr 180 185 190

Val Lys Gly Lys Lys Phe Gln Thr Ile Pro Phe Asn Val Tyr Ala Leu 195 200 205

Lys Ala Thr Ser Glu Leu Asp Leu Glu Met Glu Ala Leu Lys Thr Val 210 215 220

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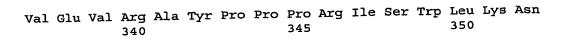
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Phe Ser Gln Leu Glu Ala Val Asn Leu His Glu Val Lys His Phe Val 325 330 335





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The Leu Asp Leu Val Asp Asp His His Gly Ser Thr Gly Gly Gln Thr 420 425 430

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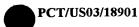
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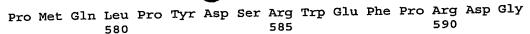
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Val Ile Glu Ser Ile Ser Pro Asp Gly His Glu Tyr Ile Tyr Val Asp 565 570 575





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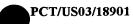
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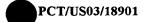
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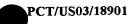
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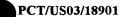
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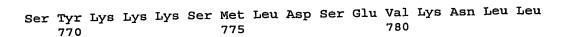
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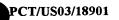




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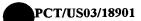


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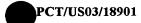


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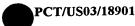
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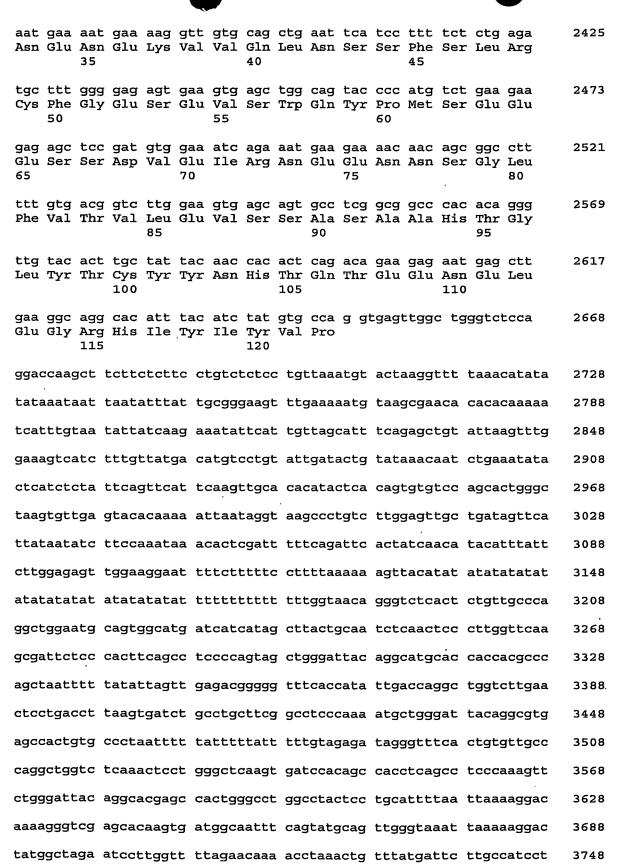
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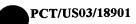
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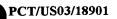
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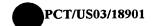




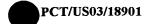
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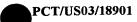


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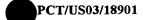




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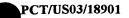




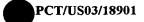




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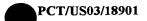
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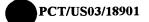


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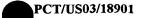


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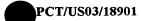




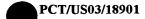
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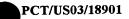
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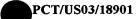
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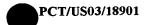








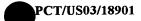
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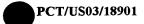
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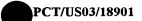






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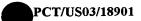




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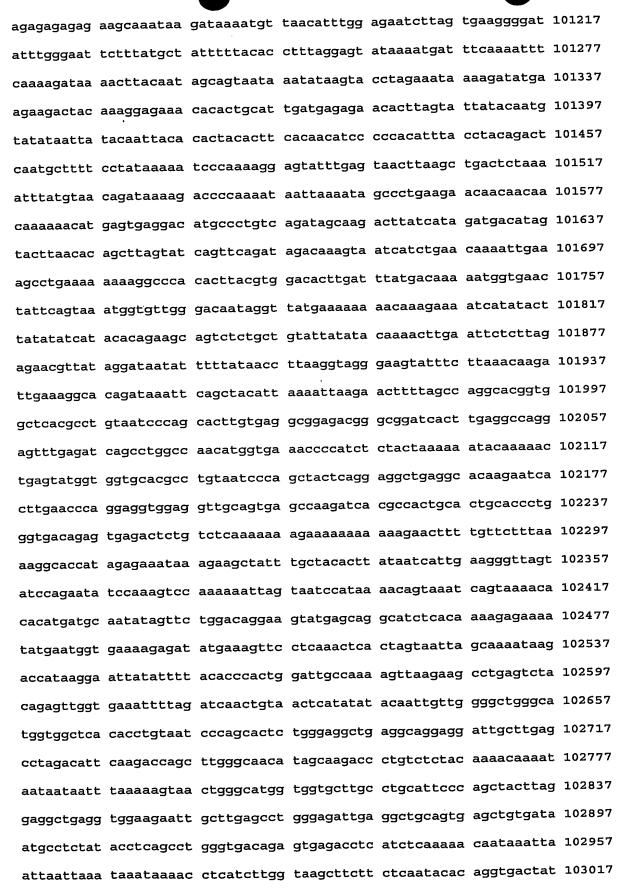




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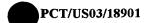








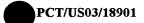


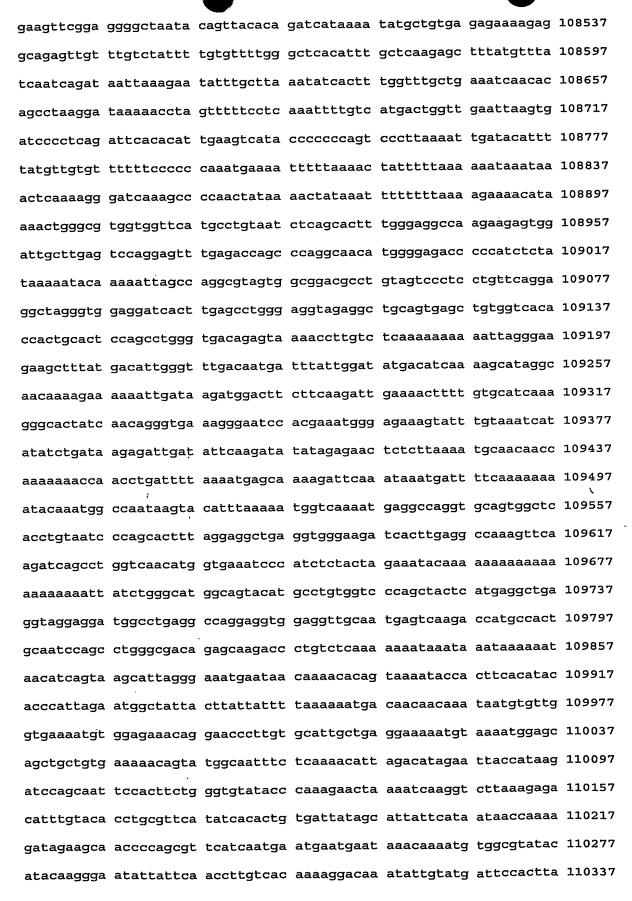


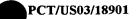
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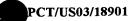




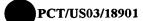


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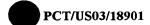




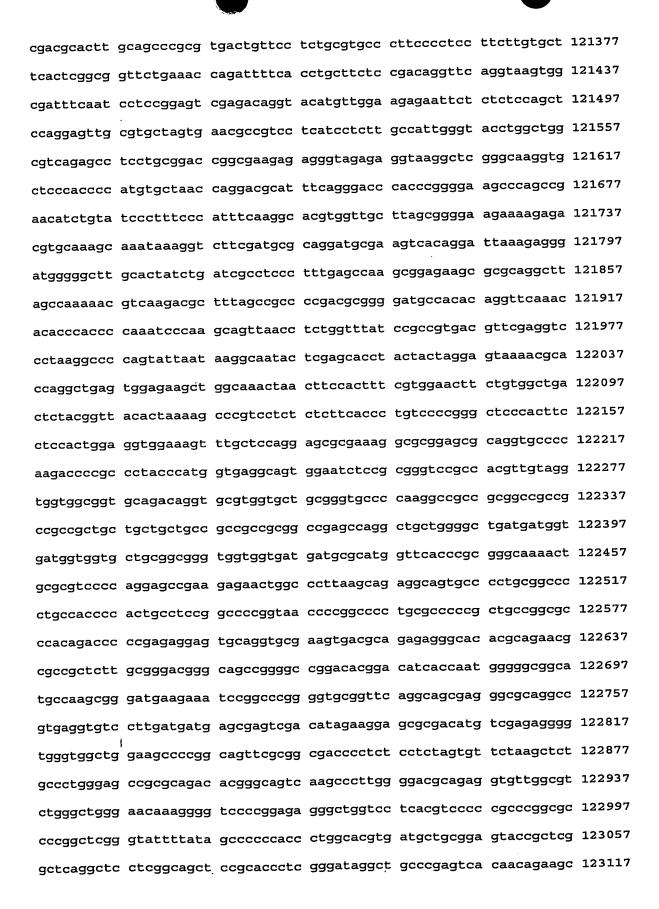
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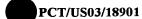


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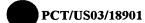
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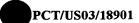
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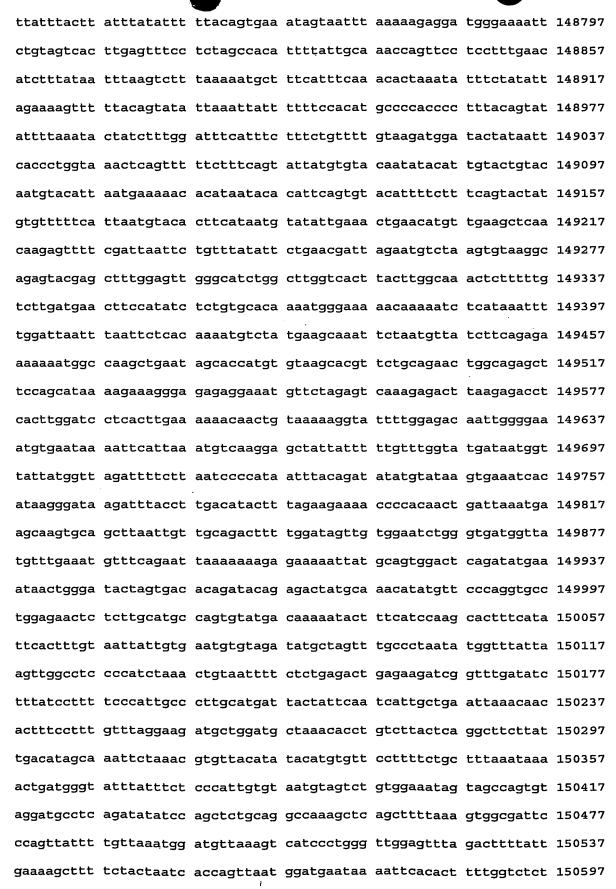


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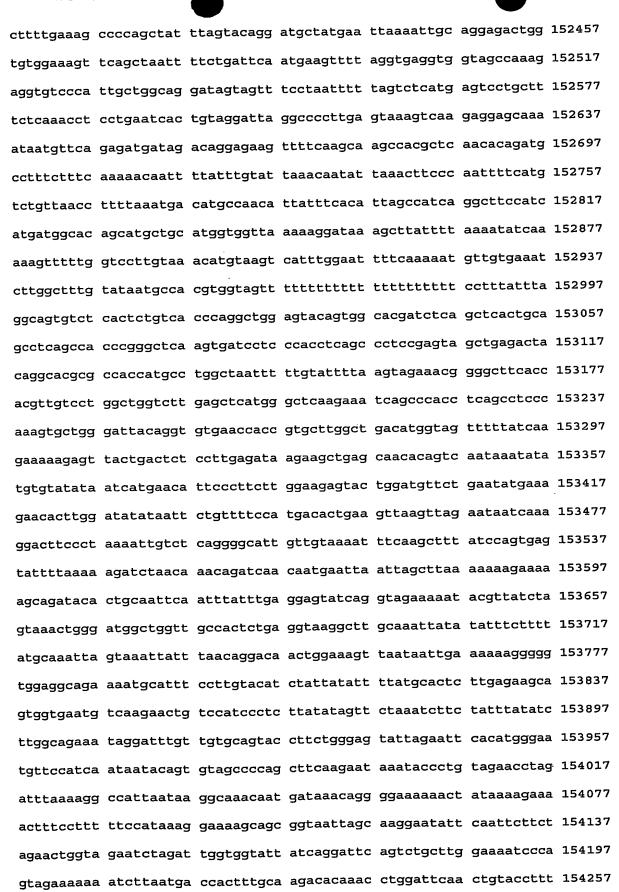


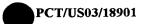


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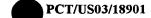


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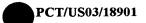




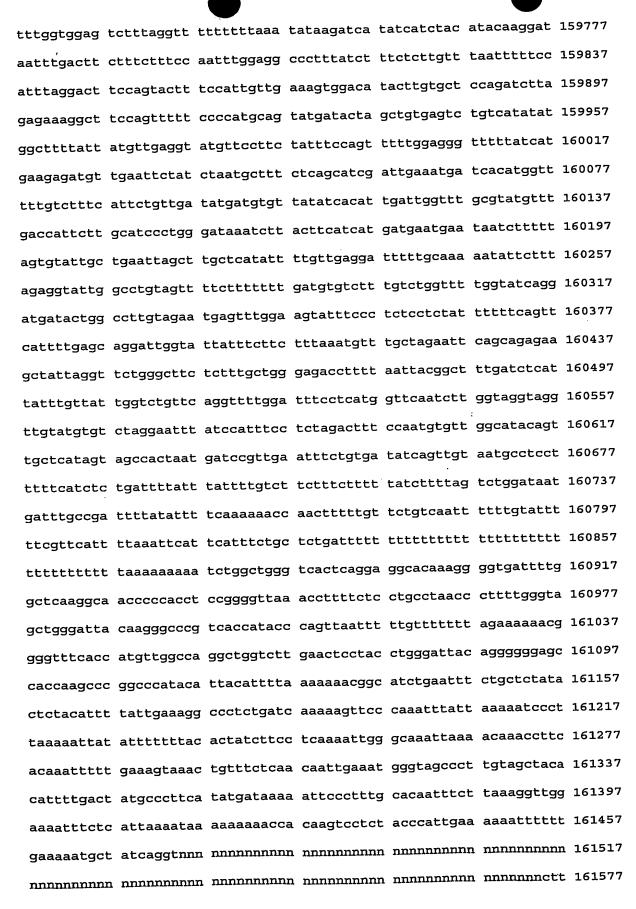
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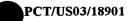


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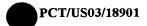


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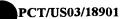




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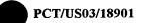






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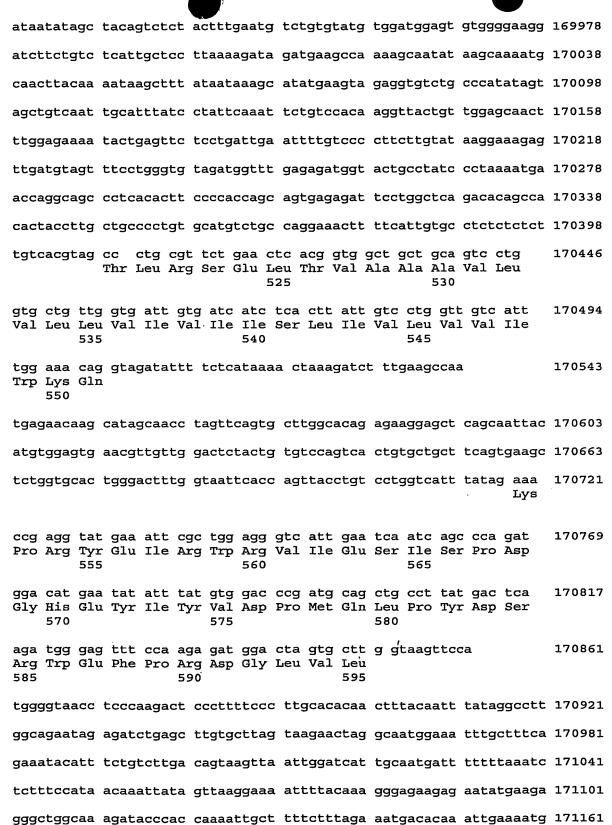




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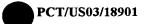


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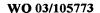
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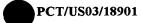




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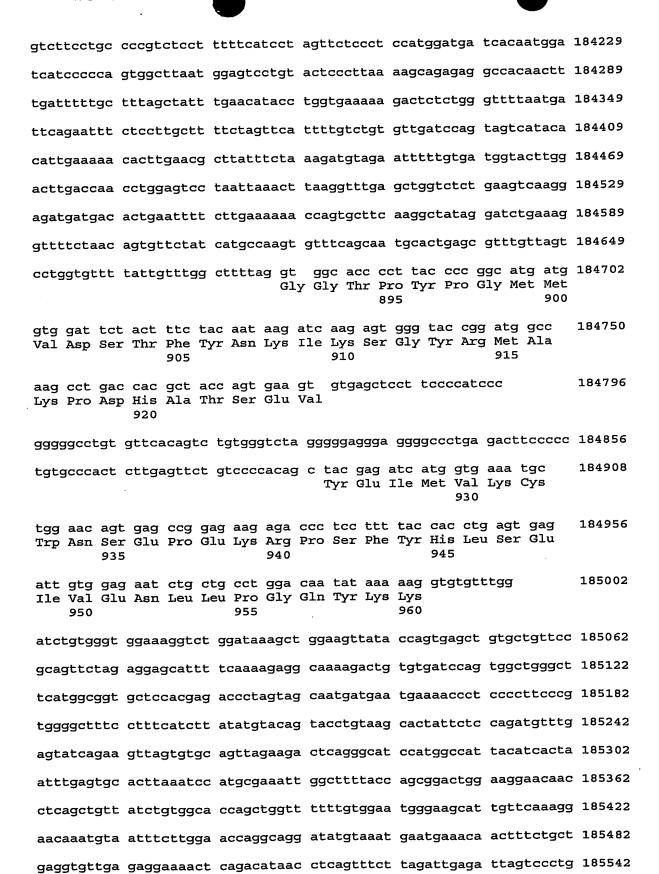
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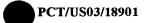
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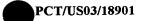
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10 15 20

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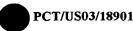
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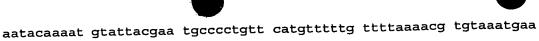
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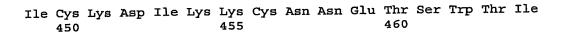


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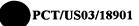
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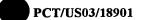
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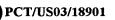
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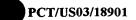


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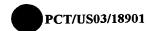
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Leu His Asn Ser Glu Gly Val Val Pro Ala Ser Tyr Asp Ser Arg Gln 165 170 175

Gly Phe Asn Gly Thr Phe Thr Val Gly Pro Tyr Ile Cys Glu Ala Thr 180 185 190

Val Lys Gly Lys Lys Phe Gln Thr Ile Pro Phe Asn Val Tyr Ala Leu 195 200 205

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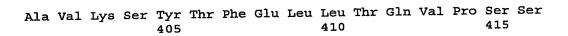
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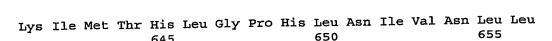
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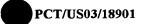
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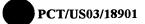
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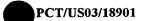




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ggg tct ( Gly Ser (	gga gcg Bly Ala	a Phe G	gg aag g Ly Lys ' 05	gtg gt Val Va	t gaa 1 Glu	gga ad Gly T 610	ca gcc t nr Ala 1	at gga Tyr Gly	a tta y Leu 615	` 2239
agc cgg Ser Arg	tcc caa Ser Gli	a cct g n Pro V 620	tc atg a al Met i	aaa gt Lys Va	t gca 1 Ala 625	var b	ag atg ( ys Met )	cta aa Leu Ly: 63	5 110	2287
acg gcc Thr Ala	aga tc Arg Se: 63:	r Ser G	aa aaa lu Lys	caa gc Gln Al 64	а цеи	atg t Met S	er Gru	ctg aa Leu Ly 645	g ata s Ile	2335
atg act	cac ct	g ggg c	ca cat	ttg aa	c att	gta a	ac ttg	ctg gg	a gcc	2383





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Cys	Thr 665	Lys	Ser	Gly	Pro	Ile 670	Tyr	Ile	Ile	Thr	Glu 675	Tyr	Cys	Phe	Tyr	
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cac His	cac His	cca Pro	gag Glu	aag Lys 700	cca Pro	aag Lys	aaa Lys	gag Glu	ctg Leu 705	gat Asp	atc Ile	ttt Phe	gga Gly	ttg Leu 710	aac Asn	2527
cct Pro	gct Ala	gat Asp	gaa Glu 715	agc Ser	aca Thr	cgg Arg	agc Ser	tat Tyr 720	gtt Val	att Ile	tta Leu	tct Ser	ttt Phe 725	Gru	aac Asn	2575
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ccc Pro	atg Met 745	cta Leu	gaa Glu	agg Arg	aaa Lys	gag Glu 750	Val	tct Ser	aaa Lys	tat Tyr	tcc Ser 755	Asp	ato Ile	cag Glr	aga Arg	2671
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tca Ser	gaa Glu	gtc Val	aaa Lys	aac Asn 780	Leu	ctt Leu	tca Ser	gat Asp	gat Asp 785	Asr	c tca n Sei	a gaa c Glu	a ggo a Gly	c ctt / Let 790	act Thr	2767
tta Leu	ttg Leu	gat Asp	ttg Leu 795	ı Leu	agc Ser	ttc Phe	aco Thi	tat Tyr 800	GIT	gtt Val	t gco l Ala	c cga a Arg	a gga g Gl; 80!	y Me	g gag : Glu	2815
ttt Phe	ttg Lev	gct Ala 810	a Sei	a aaa : Lys	Asn	Cys	: Vai	c cac l His	a Arc	j Asj	р те	n Are	a Al	t cg	c aac g Asn	2863
gto Val	cto Leu 825	ı Leı	g gca ı Ala	a cas a Glr	gga Gly	ааа Г <b>Б</b> уя 830	s Ile	t gtg e Vai	g aag l Lys	g at	c tg e Cy 83	s As	c tt p Ph	t gg e Gl	c ctg y Leu	2911
gc: Ala 840	а Гу	a ato	c ato	c ato e Met	g cat His 845	: Asj	t to p Se	g aa r Asi	c tai	t gt r Va 85	T Se	g aa r Ly	a gg s Gl	c ag y Se	t acc r Thr 855	2959
tti Phe	c cto	g cc u Pr	c gt o Va	g aag l Ly: 860	s Tr	g ate	g gc t Al	t cc a Pr	t ga o Gl 86	u se	c at	c tt e Ph	t ga e As	c aa p As 87	c ctc n Leu 0	3007
ta: Ty:	c acer Th	c ac r Th	a ct r Le 87	u Se	t gat r Asj	gt Va	c tg l Tr	g tc p Se 88	r la	t gg r Gl	ıc at y Il	t ct e Le	g ct u Le 88	u 11	g gag p Glu	3055
at Il	c tt e Ph	t tc e Se	c ct r Le	t gg u Gl	t gg y Gl	c ac y Th	c cc r Pr	t ta o Ty	c cc r Pr	c gg	jc at .y Me	g at	g gt t Va	g ga al As	t tct p Ser	3103



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890 895 900

890 895	
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tca gac aat gca tac att ggt gtc acc tac aaa aac gag gaa gac aag Ser Asp Asn Ala Tyr Ile Gly Val Thr Tyr Lys Asn Glu Glu Asp Lys 985 990 995	3391
ctg aag gac tgg gag ggt ggt ctg gat gag cag aga ctg agc gct Leu Lys Asp Trp Glu Gly Gly Leu Asp Glu Gln Arg Leu Ser Ala 1000 1005 1010	3436
gac agt ggc tac atc att cct ctg cct gac att gac cct gtc cct Asp Ser Gly Tyr Ile Ile Pro Leu Pro Asp Ile Asp Pro Val Pro 1015 1020 1025	3481
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Cys Phe Gly Glu Ser Glu Val Ser Trp Gln Tyr Pro Met Ser Glu Glu 50 60

Glu Ser Ser Asp Val Glu Ile Arg Asn Glu Glu Asn Asn Ser Gly Leu 65 70 75 80

Phe Val Thr Val Leu Glu Val Ser Ser Ala Ser Ala Ala His Thr Gly 85 90 95

Leu Tyr Thr Cys Tyr Tyr Asn His Thr Gln Thr Glu Glu Asn Glu Leu



100 105 110

Glu Gly Arg His Ile Tyr Ile Tyr Val Pro Asp Pro Asp Val Ala Phe 115 120 125

Val Pro Leu Gly Met Thr Asp Tyr Leu Val Ile Val Glu Asp Asp Asp 130 135 140

Ser Ala Ile Ile Pro Cys Arg Thr Thr Asp Pro Glu Thr Pro Val Thr 145 150 155 160

Leu His Asn Ser Glu Gly Val Val Pro Ala Ser Tyr Asp Ser Arg Gln 165 170 175

Gly Phe Asn Gly Thr Phe Thr Val Gly Pro Tyr Ile Cys Glu Ala Thr 180 185 190

Val Lys Gly Lys Lys Phe Gln Thr Ile Pro Phe Asn Val Tyr Ala Leu 195 200 205

Lys Ala Thr Ser Glu Leu Asp Leu Glu Met Glu Ala Leu Lys Thr Val 210 215 220

Tyr Lys Ser Gly Glu Thr Ile Val Val Thr Cys Ala Val Phe Asn Asn 225 230 235

Glu Val Val Asp Leu Gln Trp Thr Tyr Pro Gly Glu Val Lys Gly Lys 245 250 255

Gly Ile Thr Met Leu Glu Glu Ile Lys Val Pro Ser Ile Lys Leu Val 260 265 270

Tyr Thr Leu Thr Val Pro Glu Ala Thr Val Lys Asp Ser Gly Asp Tyr 275 280 285

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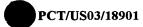
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- Lys Ile Gln Glu Ile Arg Tyr Arg Ser Lys Leu Lys Leu Ile Arg Ala 370 375 380
- Lys Glu Glu Asp Ser Gly His Tyr Thr Ile Val Ala Gln Asn Glu Asp 385 390 395 400
- Ala Val Lys Ser Tyr Thr Phe Glu Leu Leu Thr Gln Val Pro Ser Ser 405 410 415
- Ile Leu Asp Leu Val Asp Asp His His Gly Ser Thr Gly Gly Gln Thr 420 425 430
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- Ile Cys Lys Asp Ile Lys Lys Cys Asn Asn Glu Thr Ser Trp Thr Ile 450 455 460
- Leu Ala Asn Asn Val Ser Asn Ile Ile Thr Glu Ile His Ser Arg Asp 465 470 475 480
- Arg Ser Thr Val Glu Gly Arg Val Thr Phe Ala Lys Val Glu Glu Thr 485 490 495
- Ile Ala Val Arg Cys Leu Ala Lys Asn Leu Leu Gly Ala Glu Asn Arg 500 505 510
- Glu Leu Lys Leu Val Ala Pro Thr Leu Arg Ser Glu Leu Thr Val Ala 515 520 525
- Ala Ala Val Leu Val Leu Val Ile Val Ile Ile Ser Leu Ile Val 530 540
- Leu Val Val Ile Trp Lys Gln Lys Pro Arg Tyr Glu Ile Arg Trp Arg 545 550 555 560
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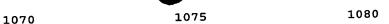
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- Leu Met Ser Glu Leu Lys Ile Met Thr His Leu Gly Pro His Leu Asn 645 650 655
- Ile Val Asn Leu Leu Gly Ala Cys Thr Lys Ser Gly Pro Ile Tyr Ile 660 665 670
- Ile Thr Glu Tyr Cys Phe Tyr Gly Asp Leu Val Asn Tyr Leu His Lys 675 680 685
- Asn Arg Asp Ser Phe Leu Ser His His Pro Glu Lys Pro Lys Lys Glu 690 695 700
- Leu Asp Ile Phe Gly Leu Asn Pro Ala Asp Glu Ser Thr Arg Ser Tyr 705 710 715 720
- Val Ile Leu Ser Phe Glu Asn Asn Gly Asp Tyr Met Asp Met Lys Gln 725 730 735
- Ala Asp Thr Thr Gln Tyr Val Pro Met Leu Glu Arg Lys Glu Val Ser 740 745 750
- Lys Tyr Ser Asp Ile Gln Arg Ser Leu Tyr Asp Arg Pro Ala Ser Tyr 755 760 765
- Lys Lys Ser Met Leu Asp Ser Glu Val Lys Asn Leu Leu Ser Asp 770 775 780
- Asp Asn Ser Glu Gly Leu Thr Leu Leu Asp Leu Leu Ser Phe Thr Tyr 785 790 795 800
- Gln Val Ala Arg Gly Met Glu Phe Leu Ala Ser Lys Asn Cys Val His 805 810 815
- Arg Asp Leu Ala Ala Arg Asn Val Leu Leu Ala Gln Gly Lys Ile Val 820 825 830





- Lys Ile Cys Asp Phe Gly Leu Ala Lys Ile Ile Met His Asp Ser Asn 835 840 845
- Tyr Val Ser Lys Gly Ser Thr Phe Leu Pro Val Lys Trp Met Ala Pro 850 855 860
- Glu Ser Ile Phe Asp Asn Leu Tyr Thr Thr Leu Ser Asp Val Trp Ser 865 870 875 880
- Tyr Gly Ile Leu Leu Trp Glu Ile Phe Ser Leu Gly Gly Thr Pro Tyr 885 890 895
- Pro Gly Met Met Val Asp Ser Thr Phe Tyr Asn Lys Ile Lys Ser Gly 900 905 910
- Tyr Arg Met Ala Lys Pro Asp His Ala Thr Ser Glu Val Tyr Glu Ile 915 920 925
- Met Val Lys Cys Trp Asn Ser Glu Pro Glu Lys Arg Pro Ser Phe Tyr 930 935 940
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- Ser Tyr Glu Lys Ile His Leu Asp Phe Leu Lys Ser Asp His Pro Ala 965 970 975
- Val Ala Arg Met Arg Val Asp Ser Asp Asn Ala Tyr Ile Gly Val Thr 980 985 990
- Tyr Lys Asn Glu Glu Asp Lys Leu Lys Asp Trp Glu Gly Gly Leu Asp 995 1000 1005
- Glu Gln Arg Leu Ser Ala Asp Ser Gly Tyr Ile Ile Pro Leu Pro 1010 1015 1020
- Asp Ile Asp Pro Val Pro Glu Glu Glu Asp Leu Gly Lys Arg Asn 1025 1030 1035
- Arg His Ser Ser Gln Thr Ser Glu Glu Ser Ala Ile Glu Thr Gly 1040 1045 1050
- Ser Ser Ser Ser Thr Phe Ile Lys Arg Glu Asp Glu Thr Ile Glu 1055 1060 1065
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Val Glu Asp Ser Phe Leu 1085

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ttc ctg gtc tta ggc tgt ctt ctc aca ggg ctg agc cta atc ctc tgc 463 Phe Leu Val Leu Gly Cys Leu Leu Thr Gly Leu Ser Leu Ile Leu Cys 15 10



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cag Gln 40	ctg Leu	aat Asn	tca Ser	tcc Ser	ttt Phe 45	tct Ser	ctg Leu	aga Arg	tgc Cys	ttt Phe 50	gly aaa	gag Glu	agt Ser	gaa Glu	gtg Val 55	559
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gta Val	cct Pro	gcc Ala 170	Ser	tac Tyr	gac Asp	agc Ser	aga Arg 175	[ Gln	ggg ggg	ttt Phe	aat Asr	: ggg 1 Gly 180	unr	tto Phe	act Thr	943
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cta Leu	ı gaa ı Glu	ato Met	g gaa : Glu	gct Ala 220	. Lev	aaa Lys	aco Thi	gtg Val	tat L Tyr 225	: ГА	g tca s Sei	a ggg	g gaa 7 Glu	acg Thi 230	g att c Ile	1087
gto Val	g gto L Val	aco Thi	tgt Cys 235	: Ala	gtt Val	ttt Phe	aac Ası	c aat n Asi 240	ı Glı	g gtg ı Val	g gti L Vai	t gad l As <u>r</u>	c ctt Let 24!	i GTI	a tgg 1 Trp	1135
act Thi	tac Tyr	e cci Pro 250	o Gly	a gaa / Glu	a gtg ı Val	g aaa Lys	gg( Gl)	y Lys	a ggo s Gly	e ato	e aca	a atq r Met 260	: ье	g gaa 1 Gl	a gaa ı Glu	1183

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Суя	Asr	a Ası	ı Glu	1 Thi 460	sei	Tr	Thr	: Ile	465	ı Ala	a Asr	ı Asr	ı Val	470		1807	
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Va]	. Thi	2 Pho 49	e Ala	а Ьу	s Val	l Glı	495	ı Thi	r Ile	e Ala	a Va.	500	g Cys	s Le	g gct ı Ala	1903	
aaç	g aat	ct	c cti	t gga	a gci	t gag	g aac	c cga	a gag	g cto	g aag	g ct	g gtg	g gc	t ccc	1951	





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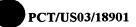


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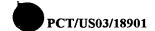
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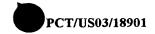
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- Arg His Ser Ser Gln Thr Ser Glu Glu Ser Ala Ile Glu Thr Gly 1040 1045 1050
- Ser Ser Ser Ser Thr Phe Ile Lys Arg Glu Asp Glu Thr Ile Glu 1055 1060 1065
- Asp Ile Asp Met Met Asp Asp Ile Gly Ile Asp Ser Ser Asp Leu 1070 1075 1080
- Val Glu Asp Ser Phe Leu 1085